REMARKS

Claims 1-40 were pending in the application. By this paper, Applicant has cancelled Claims 9, 15-18, 25-35, 37, and 39-40, amended Claims 1, 7, 8, 19, and 38, and added new Claims 41-54. Accordingly, Claims 1-8, 10-14, 19-24, 36, 38, and 41-54 are presented herein for examination.

Amendments to the Specification

The amendments to page 1 presented herein include inserted information which was not available at the time of filing with regard priority and related U.S. patent applications. Applicant submits that information inserted or deleted by these amendments does not constitute new matter.

Rejections under 35 U.S.C. §102

Per Pars. 8-9 of the Office Action, pending independent Claims 1, 7, 8, 19, 36, and 38 were rejected under §102(b) over Suorsa, et al (U.S. 5,363,849, hereinafter "Suorsa"). Applicant assumes that per the PTO Form 892 accompanying the Office Action, the aforementioned patent number is correct (versus "4,721,113" to Stewart listed in Par. 9 of the Office Action).

Per Par. 10 of the Office Action, pending independent Claims 1, 7, and 19 were rejected under §102(b) over Torrence (U.S. 4,733,688, hereinafter "Torrence").

In response to these rejections, Applicant respectfully provides the following remarks:

Claims 1 and 7 – By this paper, Applicant has amended independent Claims 1 and 7 to include limitations relating to (detecting) a local minimum. Support for this limitation is provided at, *inter alia*, page 39, lines 5-20, of Applicant's specification as filed. Applicant submits that neither Suorsa nor Torrence teach or suggest (i) detecting a local minimum within the remitted/reflected signals, or (ii) detecting a blood vessel (or wall thereof) based on such detecting of a local minimum.

Specifically, Suorsa teaches correcting for energy backscattered by the blood cells/lumen within the blood vessel through phase comparisons, and Torrence teaches gain control (e.g., TGC) as a function of depth within the subject. While Suorsa teaches compensation for lumen effects via intra- or inter-frame phase comparisons, which ostensibly sharpen the vessel-to-wall contrast (see Col. 1, lines 23-24 of Suorsa), Suorsa does not teach detecting a local minimum in order to locate or detect a blood vessel (or its wall) as recited in Claims 1 and 7 herein. While, *arguendo*, Fig. 13 of Suorsa could be interpreted to have a region of reflection which is lower in intensity and which corresponds to the lumen, Suorsa in no way teaches or suggests (i) actually detecting this region through any sort of analysis, or (ii) correlating the detection of this region to the location of the lumen, as in Applicant's invention.

Similarly, Torrence provides no teaching or suggestion of looking for minima within the profile for blood vessel or wall detection. Torrence does state that *"[t]he depth of a cyst or fluid filled cavity within the body may be determined by an experienced operator from examination of an uncompensated ultrasound display..."* at Col. 5, lines 17-20; however, Applicant's claimed invention automatically provides such functionality in order to identify the blood vessel (wall) of interest, and is also based on a processed (e.g., demodulated, etc.) signal.

Furthermore, with respect to Claim 7, limitations relating to the compression (applanation) of at least a portion of the tissue surrounding the blood vessel have been added. Support for this limitation is provided at, e.g., page 38, line 12 through page 39, line 4 of Applicant's specification. Applicant submits that neither Suorsa nor Torrence teach or suggest such compression of the tissue in any way.

Hence, based on the foregoing, Applicant submits that Claims 1 and 7 as amended herein cannot be anticipated by either Suorsa or Torrence, or rendered obvious by the combination thereof, since neither of these references teaches or suggests all elements of these Claims.

Claim 8 – By this paper, Applicant has amended independent Claim 8 to include limitations relating to identifying at least one plateau. Support for this limitation is provided at, *inter alia*, page 39, lines 5-20, of Applicant's specification as filed. Applicant submits that

neither Suorsa nor Torrence teach or suggest (i) identifying a plateau within the remitted/reflected signals, or (ii) locating a blood vessel based on such plateau(s). Nothing in Suorsa or Torrence suggests identification of a plateau region within the reflected signal for locating a blood vessel.

Hence, based on the foregoing, Applicant submits that Claim 8 as amended herein cannot be anticipated by either Suorsa or Torrence, or rendered obvious by the combination thereof, since neither of these references teaches or suggests all elements of this Claim.

Claim 19 – By this paper, Applicant has amended independent Claim 19 to include limitations relating to the recited transmitting of an acoustic wave comprising sweeping transversely across the tissue. Support for this limitation is provided at, *inter alia*, page 39, lines 15-18, and 44, line 27, of Applicant's specification as filed. Applicant submits that neither Suorsa nor Torrence teach or even suggest such a transverse sweep. This is particularly true since as previously described, neither Suorsa nor Torrence are intended as blood vessel locating apparatus as recited in Applicant's Claim 19.

Hence, based on the foregoing, Applicant submits that Claim 19 as amended herein cannot be anticipated by either Suorsa or Torrence, or rendered obvious by the combination thereof, since neither of these references teaches or suggests all elements of this Claim.

Claim 36 – Applicant herein respectfully traverses the Examiner's §102 rejection of Claim 36 over Suorsa. Specifically, Applicant submits that Suorsa in no way teaches or suggests: (i) locating of a blood vessel (see preamble of Claim 36 and last element); or (ii) forming at least one integrated power representation to identify at least one region of reduced energy reflection corresponding to the lumen of the blood vessel. Suorsa teaches correcting for energy backscattered by the blood cells/lumen within the blood vessel through phase comparisons. Corrections are applied to suppress the effect of the blood cells; see notably Col. 6, lines 13-23 discussing Fig. 13 of Suorsa. Stated differently, Suorsa applies the phase-based correction to the received reflected signals to increase the contrast between wall and lumen (see Col. 1, lines 27-30 of Suorsa). In contrast, Applicant's invention of Claim 36 performs

processing (i.e.. forms at least one integrated power representation) of the signal to identify at least one region of reduced reflection. Applicant's invention uses the existing areas of reduced reflection to identify the lumen (and hence the location of the vessel), whereas Suorsa artificially creates areas of reduced reflection (via phase-based suppression) to increase wall-lumen contrast for a vessel whose location is already known.

Hence, based on the foregoing, Applicant submits that Claim 36 as presented herein cannot be anticipated by Suorsa (or for that matter Torrence), or rendered obvious by the combination thereof, since neither of these references teaches or suggests all elements of this Claim.

Claim 38 – By this paper, Applicant has amended independent Claim 38 to include, *inter alia*, limitations relating to at least one second transducer capable of obtaining pressure signals from the blood vessel. Support for this limitation is provided at, e.g., Fig. 6 (see element 602) and supporting discussion thereof, in Applicant's specification as filed. Applicant submits that neither Suorsa nor Torrence teach or even suggest use of a second transducer for obtaining pressure signals. This is particularly true since as previously described, neither Suorsa nor Torrence are intended as blood vessel locating apparatus used in support of a blood pressure measuring device.

Hence, based on the foregoing, Applicant submits that Claim 38 as amended herein cannot be anticipated by either Suorsa or Torrence, or rendered obvious by the combination thereof, since neither of these references teaches or suggests all elements of this Claim.

Rejections under 35 U.S.C. §103

Per Par. 11 of the Office Action, Claim 22 was rejected as being obvious over Suorsa or Torrence in light of Uchida. Based on Applicant's amendments to Claim 19 discussed previously herein, from which Claim 22 depends, Applicant submits that these rejections have been rendered moot.

New Claims

By this paper, Applicant has added new independent Claims 45, 46, 49 and 51, and dependent Claims 41-44, 47-48, 50, and 52. These new claims include various limitations which are supported by the specification (and hence comprise no new matter). For example, new Claims 53-54 are supported at page 51, lines 3-22 of the specification as filed.

Applicant believes these new claims distinguish over both Suorsa and Torrence as well as the other art of record, and hence comprise patentable subject matter.

Other Remarks

Applicant hereby specifically reserves the right to prosecute claims of different scope in a reissue continuation or divisional application.

Applicant notes that any cancellations or additions made herein are made solely for the purposes of more clearly and particularly describing and claiming the invention, and not for purposes of overcoming art or for patentability. The Examiner should infer no (i) adoption of a position with respect to patentability, (ii) change or narrowing in the Applicant's position with respect to any claim or subject matter of the invention, or (iii) acquiescence in any way to any position taken by the Examiner, or surrender of subject matter or equivalents, based on such cancellations or additions.

If the Examiner has any questions or comments which may be resolved over the telephone, he is requested to call the undersigned at (858) 675-1670.

Respectfully submitted,

GAZDZINSKI & ASSOCIATES

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By: _____

Robert F. Gazdzinski
Registration No. 39,990
11440 West Bernardo Court, Suite 375
San Diego, CA 92127
(858) 675-1670
(858) 675-1674 (fax)